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IN THE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, A. D. 1928.

STATE OF WISCONSIN, STATE OF MINNESOTA, STATE OF OHIO, and STATE OF PENNSYLVANIA,
Complainants,

vs.

STATE OF ILLINOIS and SANITARY DISTRICT OF CHICAGO,
Defendants.

No. 7, Original.

STATE OF MISSOURI, STATE OF KENTUCKY, STATE OF TENNESSEE, STATE OF LOUISIANA, STATE OF MISSISSIPPI, and STATE OF ARKANSAS,
Intervening Defendants.

STATE OF MICHIGAN,
Complainant,

vs.

STATE OF ILLINOIS and SANITARY DISTRICT OF CHICAGO,
Defendants.

No. 11, Original.

STATE OF NEW YORK,
Complainant,

vs.

STATE OF ILLINOIS and SANITARY DISTRICT OF CHICAGO,
Defendants.

No. 12. Original.

SUGGESTIONS BY THE CITY OF CHICAGO IN REPLY TO BRIEF AND AFFIDAVIT IN OPPOSITION TO THE MOTION AND PETITION OF THE CITY OF CHICAGO FOR LEAVE TO INTERVENE AS A CO-DEFENDANT.

CITY OF CHICAGO,

By SAMUEL A. ETTELSON,
Corporation Counsel,
Solicitor and of Counsel for Petitioner.

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SUGGESTIONS BY THE CITY OF CHICAGO IN REPLY TO BRIEF AND AFFIDAVIT IN OPPOSITION TO THE MOTION AND PETITION OF THE CITY OF CHICAGO FOR LEAVE TO INTERVENE AS A CO-DEFENDANT.

The City of Chicago submits these suggestions in reply to the affidavit and brief of complainants opposing the peti-

tion of the City to intervene because both the purpose and effect of the City's petition are misconceived and misstated.

1. In its petition the City expressly states (p. 17) that the City does not seek any delay in this proceeding.

The City by the very prayer of its petition clearly adopts all pertinent evidence that may affect its rights now in the record and by this request clearly denies the intention to seek to duplicate such evidence. Thus, the City does not seek to offer evidence as to any of the four points set out in detail in the brief in behalf of the complainants. On the ground thus suggested, therefore, no delay will result from the City's intervention; and these facts, which are obvious from a fair consideration of the City's petition, answer completely the principal ground of the complainants' objection.

2. Complainants state that they prayed in the original bill of the State of New York—but, it should be noted, *not* in the Wisconsin bill—for "the complete cessation of the diversion of water from Lake Michigan by the Sanitary District of Chicago for the purpose of disposing of the sewage of the district." (Affidavit in opposition, paragraph 5, page 3.)

The statement for the first time made by counsel for complainants at the hearing before the Special Master on March 29th last, less than three weeks ago, was that complainants would seek a decree which would require in its enforcement the discharge of artificially treated sewage as well as storm water drainage into Lake Michigan, from which the City of Chicago takes its drinking water.

In other words, the bill prays an injunction in the usual form against a certain diversion claimed to be illegal—against the continued performance of certain acts of the

Sanitary District. Complainants' counsel now propose a mandatory injunction which will require not only the cessation of illegal diversion by the Sanitary District, but also an affirmative act directly resulting in pollution of Chicago's drinking water. This mandatory injunction affects the interests of the City in a special and an entirely different way, and to an entirely different extent, than the prohibitive form of injunction sought for by the original bills.

In this connection the City desires to point out that the diversion may be entirely stopped without necessarily polluting the water supply of the City, if the Sanitary District erect a gate or dam at the mouth of the Chicago River, in accordance with the suggestion of the War Department. The Court will remember that the War Department required as one of the conditions of the permit of March 3, 1925, that plans for such gate or lock be submitted by the Sanitary District within a reasonable time, and that such gate or lock be thereafter constructed before the expiration of the permit. It has been testified on the present rereference hearing before the Special Master by the Chief of Engineers of the United States Army that such plans have been duly submitted, but that the Chief of Engineers has not yet decided which of several alternative plans will be selected, and for that reason, and that reason only, such gate or lock has not yet been constructed.

It follows, necessarily, that the relief complainants' counsel now announce they will seek would not only render impossible the use of any such gate or lock, but will, of course, necessarily deprive the City of the protection to be thus afforded it, a protection upon which the City has heretofore relied, and, it is respectfully submitted, has had a right so to rely.

3. Without regard to these matters, the City respectfully submits that it is an essential party, if the proper

scope and effect of the re-reference, as ordered by this Court in its opinion of January 14, 1929, be carried out. The Court says in the last paragraph of its opinion:

> "To determine the practical measures needed to effect the object just stated and the period required for their completion, there will be need for the examination of experts; and the appropriate provisions of the necessary decree will require careful consideration."

Throughout the concluding part of the opinion, the Court clearly manifests its purpose to obtain by the re-reference such information as will permit an equitable adjustment of the conflicting rights and interests of the parties concerned. The relief sought by complainants, as now defined by them, beyond question vitally affects the City of Chicago, and, as stated in the City's petition, the City is prepared to prove not only by evidence now in the record but by other evidence, if so required, that such relief will impose upon the City a financial burden which will exceed several hundred millions of dollars. The spirit of the re-reference —a composition in accordance with the well established principles of equity—requires that the Special Master be fully advised as to the financial capacity of the City of Chicago to meet and carry out this heavy burden. The Master should be informed as to Chicago's income, the extent of its unexpended bonding power, as to the revenue it may reasonably anticipate during the years to come to be derived from taxation and from other sources. In addition, the City could with propriety submit the other demands which the needs and the rights of its citizens require in connection with the expenditure of the City's revenue. All of this information is not only pertinent to the inquiry before the Special Master, but, we submit, is essential if the purpose and spirit of the Court's opinion be carried out. If the Special Master, as a result of the re-reference, sub-

mits a decree which, in accordance with equitable principles, will accord the relief to the complainants the Court has found they are entitled to, it seems to us that he will necessarily have to consider the City's rights in the premises, so as not to impose an undue or inequitable burden upon any of the people to be affected by it. Clearly, as to these matters solely affecting the City of Chicago, the Sanitary District has no right or authority or responsibility, and only the City, itself, may offer competent and conclusive evidence.

The papers submitted by complainants in opposition to this motion pay no attention to the nature of the re-reference hearing, which, as we submit, is conclusive upon our right to intervene. In a word, the City could with propriety assume that the Sanitary District in its own interests would present every legal contention in support of its claimed right to divert water from Lake Michigan for the purpose of disposing of sewage of the district, but since the Sanitary District has no authority or responsibility in reference to procuring for the citizens of Chicago a pure and unpolluted drinking water, the City must assume responsibility in this connection.

THE CITY OF CHICAGO,

By SAMUEL A. ETTELSON,
Corporation Counsel.

SAMUEL A. ETTELSON,
Of Counsel.

ABSTRACT OF PRINCIPAL POINTS IN SPECIAL MASTER'S REPORT IN CHICAGO DIVERSION CASE.

(This abstract is merely intended to aid as a convenient summary, and is not to be taken as adding to or modifying in any way the text of the Special Master's Report.)

The Supreme Court of the United States, by order of January 14, 1929, referred certain questions to Charles Evans Hughes as Special Master to take testimony and report his conclusions and recommendations for a decree. Under the permit of the Secretary of War of March 3, 1925, a diversion of 8,500 cubic feet per second of water from Lake Michigan through the Chicago Drainage Canal was authorized. This permit expires on December 31, 1929. The Supreme Court in its opinion of January 14, 1929 sustained this permit, which was temporary and conditional, in view of the existing exigency. The Court said that it might be "that some flow from the Lake is necessary to keep up navigation in the Chicago River, which really is part of the Port of Chicago, but that amount is negligible as compared with 8,500 second feet now being diverted;" and that beyond that negligible quantity the validity of the Secretary's permit derived its support from a situation produced by the Sanitary District in violation of the rights of the complainant States. The Court considered it to be its duty by an appropriate decree to compel the reduction of the diversion to a point where it would rest on a legal basis. The Court said: "The Sanitary District authorities, relying on the argument with reference to the health of its people, have much too long delayed the needed substitution of suitable sewage plants as a means of avoiding the diversion in the future. Therefore they can not now complain if an immediately heavy burden is placed upon the District because of their attitude and course. The situation requires the District to devise proper methods for providing sufficient money and to construct and put in operation with all reasonable expedition adequate plants for the disposition of the sewage through other means than the Lake diversion."

The Special Master states that the questions referred to him are deemed to be (1) the practical measures necessary for the disposition of the sewage of the Sanitary District; (2) the time within which these sewage disposal works can be completed and put into operation; (3) the reductions in the diversion that will be practicable immediately and from time to time pending the completion of the sewage disposal works; and (4) the diversion, if any, of water from Lake Michigan which will be necessary for the purpose of maintaining navigation in the Chicago River as a part of the Port of Chicago after these sewage disposal works are in full operation.

The Special Master took voluminous testimony and the case was finally submitted to him, after oral argument and upon briefs, on October 18, 1929.

The Sanitary District presented before the Master a comprehensive program for treatment of the sewage and wastes, within the area of the District, in four main treatment units, the North Side, Calumet, West Side and Southwest Side treatment plants. This program, which was substantially approved by the complainant States so far as sewage treatment is concerned, is found by the Master to afford practical measures from the standpoint of present sanitary engineering knowledge for the complete treatment of the dry weather flow of sewage and wastes of all the area within the District, and also, in times of storm, of approximately 150% of the ordinary dry weather flow of sewage and wastes. The Master also finds that what is described as "complete treatment" of the sewage taken to the treatment works does not amount to 100% purification; that with efficient operation the proposed treatment plants should attain not less than an annual average of 85% purification of the sewage treated and that it is probable that the degree of purification will be 90% or more. The Master finds that the remainder of the storm flow, in excess of the volume treated in the sewage treatment plants, will pass into the Chicago River and its branches and into the canals of the

Sanitary District, and that any storm flow so passed will contain sewage and wastes which have not been treated by the sewage treatment works.

There was serious controversy as to the time within which the sewage treatment program could be completed. The Sanitary District estimated that twelve to fifteen years would be needed to complete the program in its entirety. The complainant States insisted that five to six years would be sufficient. The North Side plant would have been completed by December 31, 1929, but for the delay in construction during the current year on account of lack of funds. It is expected to be completed by April or May, 1930. The Sanitary District asked that July 1, 1930, be taken as the effective date.

The proposed Southwest Side treatment plant will take the longest to construct and thus is the controlling factor. The site has not yet been acquired. This plant will take care of the Stockyards' wastes in addition to domestic sewage, and the Sanitary District claims that further investigations are necessary in order properly to design the plant.

The Master reports that after consideration of all the evidence, the following times should be allowed for completion of the respective works: The North Side plant, July 1, 1930; the Calumet plant, December 31, 1933; the West Side plant, December 31, 1935; the Southwest Side plant, and with it the completion of the entire sewage treatment program, in nine calendar years, that is, by December 31, 1938.

With respect to the reduction of the diversion, the defendants point to the recent rise in the levels of Lake Michigan and of the other Great Lakes and urge that the necessity for immediate reduction in the diversion no longer exists. The Master has reported this evidence to the Court showing that in 1928 the mean level of Lake Michigan was approximately twenty-one inches higher than that for the year 1926, and that in 1929, there was a further decided rise so that in July the mean level of Lake Michigan was ap-

proximately three feet and nine inches higher than at the corresponding time in 1926. The Master states, however, that this change in lake levels which he reports for the information of the Court cannot be taken to modify the decision of the Court, under which he is acting, with respect to the legal rights of the complainants in relation to the diversion or as to the nature of the ultimate relief to be awarded.

The complainant States proposed a reduction of the diversion on December 31, 1929 (on the expectation of the completion by that time of the North Side plant) from 8,500 cubic feet per second to 6,500 cubic feet per second. These figures refer to the annual average direct diversion of lake water by the Sanitary District and are exclusive of the water pumped by Chicago for its domestic purposes. The Master reports that the annual average direct diversion by the Sanitary District of water from Lake Michigan should be reduced to 6,500 cubic feet per second on July 1, 1930. This is exclusive of pumpage.

It was not disputed that the practicability of a further reduction of the direct diversion during the construction of the sewage treatment program depends upon whether controlling works are installed in the Chicago River, or at or near the head of the Chicago Drainage Canal, in order to prevent the reversal of the Chicago River in times of storm, or whether the hydraulics of the Chicago River and Drainage Canal would permit the prevention of reversal of the River with the present controlling works at Lockport. That is, it was not disputed that there could be no further progressive reductions in the diversion pending the completion of the sewage treatment program beyond the point where substantial reversals of the Chicago River are prevented.

The Master finds that the evidence is not sufficient to warrant a conclusion that the present controlling works at Lockport would be adequate for this purpose.

The Sanitary District included in its program the construction of controlling works either in the Chicago River or at or near the head of the Drainage Canal. The com-

plainant States stated that they did not regard such works as essential and that their construction should be left to the discretion of the defendants. In the exhibit of the complainants' program submitted by their sanitary expert, provision was made for a reduction of the direct diversion (that is, exclusive of pumpage) pending the completion of the sewage treatment works, and with control works built by December 31, 1932, to 5,000 cubic feet per second on that date, and to 3,000 cubic feet per second on December 31, 1933. No further reduction was proposed before the sewage treatment works were completed. The installation of new controlling works in the Chicago River, or in the Drainage Canal, these being navigable waterways, would necessarily be subject under the applicable act of Congress to the approval of the Secretary of War on the recommendation of the Chief of Engineers. The Master finds that, subject to the approval of the Secretary of War, controlling works should be constructed by the Sanitary District for the purpose of preventing reversals of the Chicago River at times of storm; that for this purpose the Sanitary District should immediately submit plans for such works to the Chief of Engineers and that such controlling works should be constructed by the Sanitary District within two years after receiving the authorization of the Secretary of War. The Master finds that when such controlling works have been constructed the diversion by the Sanitary District of water from Lake Michigan should not exceed the annual average of 5,000 cubic feet per second in addition to domestic pumpage. The Master finds that there is not sufficient evidence to warrant a present requirement for the further reduction to 3,000 cubic feet per second at the particular time stated by complainants, but recommends in his report that there should be a provision in the decree for an appropriate examination of results from time to time as the work of sewage treatment progresses. In this way there may be a reduction to 3,000 cubic feet per second or

to such other amount as the Court may find to be feasible in the light of the situation then existing.

The complainant States asked that on the completion of the sewage treatment works all flow at Lockport should be enjoined, which would mean not only the entire cessation of the direct diversion by the Sanitary District, but also the termination of the discharge at Lockport of the pumpage, that is, of the water taken by the City of Chicago for domestic purposes and entering the Chicago River and the Drainage Canal as sewage. The Master finds that the question of pumpage is incidental to that relating to the direct diversion by the Sanitary District. These suits were brought to restrain the abstraction of water from Lake Michigan by the Sanitary District and not to challenge the right of the City of Chicago to take water from the Lake for its water supply. The Supreme Court in its opinion described these suits as brought "for an injunction against the State of Illinois and the Sanitary District of Chicago from continuing to withdraw 8,500 cubic feet of water a second from Lake Michigan at Chicago," and this amount of 8,500 cubic feet per second is the diversion by the Sanitary District allowed by the permit of March 3, 1925, exclusive of pumpage. The Master does not regard it as open to serious question that the City of Chicago under authority of the State has the riparian right to take water from Lake Michigan for the ordinary uses of its inhabitants and, if it were sought to prevent an abuse of that right through the taking of an unreasonable amount, it would be necessary to present that issue in an appropriate manner. The Master further expresses the opinion that if Chicago is entitled to take its water supply from Lake Michigan for the ordinary and reasonable uses of its inhabitants, it cannot be said that the State or the City is subject to any established rule of law which requires it to turn into the Lake what is no longer water but is sewage or the effluent of sewage treatment plants. If there were

a way of destroying the sewage or sewage effluent altogether, or evaporating it, it does not appear that the State or the City would violate any right of the complainants in doing so. But as there is no means known at present of otherwise disposing of the effluent from the sewage treatment plants, it is assumed that it must either be turned into the Canal and River, thence to be discharged at Lockport, or be carried into Lake Michigan. The question of the disposition of the effluent from the sewage treatment plants thus requires consideration in connection with the award of relief as to the direct diversion by the Sanitary District.

The Master further points out that under the opinion of the Supreme Court in the present suits the question of the allowance of the diversion of water from Lake Michigan in the interest of a waterway to the Mississippi is not deemed to be open to consideration as the Court has found that Congress had not acted directly so as to authorize the diversion in question, and in the Rivers and Harbors Act of January 21, 1927, Congress had declared that nothing therein contained should be construed as authorizing any diversion of water from Lake Michigan.

The Master, therefore, in dealing with the question of what diversion, if any, would be necessary for navigation after the sewage treatment program had been full carried out, has considered the conditions in the Chicago River as a part of the Port of Chicago, as indicated in the opinion of the Supreme Court.

The characteristics and effect of the effluent from the sewage treatment plants when in full operation were estimated variously by the expert witnesses. The witnesses for the complainant States say that the effluent would be stable, odorless and clear; that conditions in the River would be greatly superior to those now obtaining and would not be detrimental to navigation. This was contested by the witnesses for the Sanitary District. The difficulties of prediction inhere in the attempt to estimate results on such a vast and unprecedented scale of sewage treatment as

that involved in the disposal of the sewage of a population now estimated at over 3,500,000, with an additional population equivalent of industrial wastes of 1,500,000, and an estimated total of human population, and population equivalent of industrial wastes, of 6,800,000 in 1945. The experience of very much smaller communities, the Master says, affords little aid in determining the effect of this enormous volume of effluent from the sewage treatment works and the storm water run-off containing untreated sewage flowing into the channels of the Drainage Canal and the Chicago River. The complainants have suggested that outfall sewers or tunnels might be built to take the effluents directly to Lake Michigan, but the Master did not find the evidence to be convincing that this would be a reasonable requirement. The sanitary expert for the complainants stated that it would be practicable in the sense that it could physically be done, but that he did not mean that it was practicable in the sense that he would recommend doing it as an available means for the City in disposing of its sewage at this time. This would also still leave the problem of the storm flow. It was also suggested that circulating water might be pumped from the existing pumping stations into the Drainage Canal and the Chicago and Calumet Rivers which might create proper conditions in the Canal and Rivers, but it was testified that the result would be to carry whatever filth there was in these channels to the Lake more rapidly. The effluents from the sewage treatment plants and the storm water must go somewhere and the Master finds that if they are taken away from the Lake and discharged through the Canal at Lockport both the danger to the water supply will be removed and conditions suitable to navigation can be maintained. It is well established, however, that if the effluent from the sewage treatment plants and the storm water are to be discharged through the Drainage Canal at Lockport some flow from the Lake will be required. The Master concludes that, so far as the question can be determined at this time, the interests of

navigation in the Chicago River as a part of the Port of Chicago, when the sewage treatment program has been carried out, will require that the flow of the Drainage Canal be discharged at Lockport and that for this purpose there will be necessary a diversion of water from Lake Michigan of an annual average of not less than 1,000 cubic feet per second and that it would be safer to allow a mean annual diversion of 1,500 cubic feet per second, in addition to pumpage. These amounts of 1,000 and 1,500 cubic feet per second are comparable with the 8,500 cubic feet per second now allowed.

The Master believes that this disposition will be in accord with the equitable principles which appropriately govern the exercise of the jurisdiction to determine controversies between States, a jurisdiction which is unfettered by technicalities and in the last analysis is for the purpose of establishing substantial justice. In the present instance, equitable considerations are those applicable with appropriate regard to the substantial rights of the complainants after the Sanitary District has carried out its program for sewage treatment. The Master points out that in his former report it was found to be possible to determine with approximate accuracy the full extent of a particular diversion of water from the Great Lakes; that a diversion did not operate to cause a continuous and never-ending lowering of levels, but that within practical limits under present conditions an approximate equilibrium would be reached within a period of time which could be calculated, after which the effect of the diversion would cease to increase. Accordingly, in the former report it was determined that the full effect of a mean annual diversion of 8,500 cubic feet per second of water from Lake Michigan through the Drainage Canal was to lower the levels of Lake Michigan and Lake Huron approximately six inches at mean lake levels; the levels of Lake Erie and Lake Ontario approximately five inches at mean lake levels; and the levels of the connecting rivers, bays and harbors, so far as they have

the same mean levels as the above mentioned lakes, to the same extent respectively. It was also found that if the diversion at Chicago were ended, assuming that other diversions from the Great Lakes remained the same, the mean levels of the lakes and rivers affected by the Chicago diversion would finally be raised to the same extent as they had been lowered respectively by that diversion. On a similar calculation, the entire effect of a mean annual diversion of 1,000 cubic feet per second by the Sanitary District would be the lowering of Lakes Michigan and Huron approximately seven-tenths of an inch, and, of a mean annual diversion of 1,500 cubic feet per second, approximately one inch at mean lake levels. The Master states that it can hardly be maintained that a diversion not exceeding an annual average of 1,500 cubic feet per second would produce such a substantial injury to the complainants, when the fluctuations of lake levels due to other causes than diversions are considered, as to preclude attention to the serious consequences which may result from a failure to maintain suitable conditions in the interests of navigation in case all flow at Lockport should be terminated. In the Master's opinion, such an extreme requirement, after the Sanitary District has provided for sewage treatment so far as practicable, should await more exact knowledge as to its effect. It is also stated in the report, in accordance with the statement made before the Master by the Chief of Engineers that temporary diversions of a greater flow than the average annual diversion in order to prevent sewage contaminated water from a storm water run-off from reaching Lake Michigan will not affect in any sensible degree the levels of the Great Lakes.

The Master recommends that provision should be made in the decree for an examination of results after the completion of the sewage treatment works so there may be such further or other relief in respect to the diversion of water from Lake Michigan as may be found to be feasible. For this purpose the Master recommends that the decree should

provide for semi-annual reports by the Sanitary District on July first and January first of each year beginning July 1, 1930, adequately setting forth the progress made in the construction of the sewage treatment plants, and also the extent and effects of the operation of such plants as have been placed in operation, and the average diversion of water from Lake Michigan from the entry of the decree to the date of the report. The Master recommends that, on the coming in of each of said reports and on due notice, any of the parties, complainants or defendants, may apply to the Court for such action or relief either with respect to the time to be allowed for the construction, or the progress of construction, or the methods of operation, of any of the sewage treatment plants, or with respect to the diversion of the water from Lake Michigan, as may be deemed to be appropriate. It is also recommended that irrespective of the filing of such reports, any of the parties may apply to the Court for any further action or relief and that the Court shall retain jurisdiction of the suits for the purpose of any order or direction or modification of the decree or any supplemental decree, which it may consider at any time to be proper in relation to the subject matter of the controversy.